ELECTRONIC SANITARY SURVEY PROJECT BULLETIN

NOVEMBER 2006

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ABOUT THE DRINKING WATER ACADEMY

The Drinking Water Academy is a long-term training initiative whose primary goal is to expand EPA, state, and tribal capabilities to implement the 1996 Amendments to the Safe Drinking Water Act.

For more information on the DWA or on the electronic sanitary survey project, visit the Web site at www.epa.gov/safewater/dwa.html or contact Jamie Bourne at Bourne.James@epa.gov or at (202) 564-4095.

SPOTLIGHT ON UTAH

Utah has conducted 420 surveys electronically using the Electronic Sanitary Survey (ESS) software. The program began using the older version of the software in 2004. When the software was upgraded in 2005, the Drinking Water Academy (DWA) team assisted Utah in converting to the new ESS format. Utah is a SDWIS Oracle state with about 1,700 water systems in the SDWIS database. Utah's field staff uses PDAs to conduct sanitary surveys.

Like many other states, Utah delegates sanitary surveys of certain types of public water systems (primarily non-transient systems) to local health departments. The drinking water program has had long-term concerns about the quality of surveys produced by local health departments. Like other states' drinking water programs, Utah's realizes that the local health departments have many other programs to oversee and often the inspectors know very little about water systems. The state has been very pleased with the improvement in the quality of surveys that have been conducted by the local health departments using the ESS.

The local health departments are not able to access the drinking water program's ESS files. In order to accommodate their setup, the DWA ESS team developed the capability to enable Utah to create an export version of the electronic sanitary survey (Field Desktop) that could be completed by the local health departments and returned to the drinking water program to be merged into the central ESS database.

In addition, various enhancements and improvements to the software have been made to accommodate specific needs of Utah. These improvements are incorporated into the software and are available to

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> **"Utah's potential savings from ESS are 3 to 14 hours per survey or 0.48 to 2.3 FTE per year."**
> **— Patti Fauver**

Time Savings in Utah: Early Results

Activity	Time Savings per Review
Survey Preparation	15 to 30 minutes
Document Preparation	55 minutes to 5 hours
Field Inspection	Same
Report Preparation	1 to 8 hours
Deficiency Data Entry	30 minutes
Update System Components	15 to 30 minutes
Compliance Tracking	Same. New Ground Water Rule may elevate this element in implementation importance
Total Time Savings per Survey	3 to 14.5 hours
Total Surveys Conducted per Year	330
Total Time Savings to Conduct Surveys in Utah	900 to 4,785 hours per year

This translates into 0.48 to 2.4 Full-time Equivalents per Year

STATE AND EPA REGION HIGHLIGHTS

Alaska started conducting electronic surveys in the field for "Ground Water No Treatment" systems and is now looking into alternatives (question set changes) for conducting surveys of systems with treatment. State staff members have completed 69 surveys in the field since March 2006. The drinking water program is also constructing a process to allow third parties to conduct electronic surveys.

Arizona is working on the ESS question sets to make sure they meet the eight elements of a sanitary survey and is acquiring tablets for staff members. Arizona migrated to SDWIS Web Release 1.0. Staff members are expected to start using the ESS software by spring 2007.

California has developed a small system question set for ESS, installed the SDWIS 8.1 migration version to allow transfer of data to SDWIS, and conducted test surveys using the ESS software.

Connecticut has completed refining small system question sets, conducted several test surveys, and is now ready to take the ESS into the field using tablets.

Delaware is refining its question sets.

Hawaii is using ESS in the field, but is not yet integrated with SDWIS/state. That integration should occur soon.

Illinois is working on the ESS question sets.

Indiana finished revising question sets for small systems and transient systems. The

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SPOTLIGHT ON UTAH

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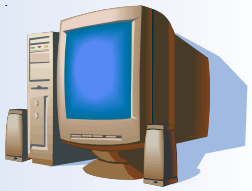
all users. They include a customized deficiency report, survey list sort capability, several new deficiency fields, and the development of new deficiency reports with "add notes" capability.

In addition to proving greater consistency in conducting sanitary surveys among the various regional offices in Utah, the ESS process is resulting in time savings in every phase of the sanitary survey process: survey preparation; report preparation; deficiency reporting; updating system components; and compliance tracking. The box on page 1 provides details of the time savings for surveys conducted in Utah. A conservative estimate of time savings is 0.48 – 2.3 FTEs per year (assuming 330 surveys annually).

ESS ENHANCEMENTS COMPLETED IN FY 2006

DESKTOP VERSION ENHANCEMENTS

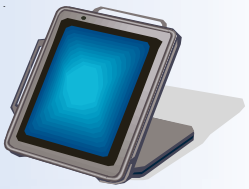


- Enhanced Question-set management – upgraded software includes additional Deficiency information, such as "Days to Correct Deficiency," "Regulatory Reference Code," and "Demerit points."
- Bridge from SQL Server SDWIS state data to ESS software allows SQL states to populate SDWIS water system data for their electronic surveys.
- Improved Sorting and Filtering functionality allows users to more quickly locate a particular survey in the list of surveys.
- Water system management component in ESS software reconfigured to match SDWIS coding of system components and inventory.
- Improvement in attaching pictures allows pictures to be attached to individual sanitary survey questions.
- New reports display deficiency information, SDWIS data changes, and water system inventory changes.
- Software code enhancements related to preparing the survey for SDWIS state updates.
- New Field Desktop functionality accommodates states that need to provide surveys to remote users who do not have access to the state network.
- Integrated Picture and Document handling for Field Desktop users.
- Integrated state-specific Deficiency reports.
- Role-based security for various ESS modules.

PDA ENHANCEMENTS

- Enhanced "Save" functionality to minimize XML corruption issues.

TABLET ENHANCEMENTS



- Enhanced table structures to reflect Desktop ESS.
- Enhanced tab order functionality.
- Pop-up notice of potential deficiency when an answer is provided that does not match the pre-determined "correct" answer.

STATE AND EPA REGION HIGHLIGHTS

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state conducted seven test surveys in the field using the ESS software. Staff members received ESS training. Indiana has developed standard operating procedures, and staff members are now ready to conduct surveys in the field using Tablet ESS software.

Maine has been steadily working with ESS in the field and has conducted over 110 surveys using PDAs. The drinking water program began with transient non-community and small system question sets and is expanding them to include community water systems.

Maryland received a Webcast presentation on how ESS works. The DWA ESS team was given sanitary survey questions in Excel spreadsheet format to build a question set in ESS format. Because Maryland is a non-SDWIS state, a bridge between its database and ESS will be necessary.

Massachusetts tested ESS in the field and decided to use a variation of the ESS software.

Missouri is working on its ESS question sets. (Because Missouri is the sole SDWIS DB2 state, it is using a customized bridge database to download water system data from SDWIS.) Staff members are testing the software and soon will use Tablet ESS software in the field.

New Mexico is testing ESS and preparing for field use.

North Carolina has installed ESS software and has tested linking it to SDWIS. A Webcast gave the staff an overview of ESS functionality for the Tablet and PDA software versions. The state is refining its question sets, reviewing SDWIS inventory data for duplicates, and ordering electronic equipment.

Ohio has installed ESS software and is working on its ESS question sets. A Webcast gave the staff an overview of ESS functionality for the Tablet and PDA software versions.

Rhode Island has tested the ESS software. The drinking water program plans to complete its question sets and roll out ESS implementation after rolling out SDWIS later this year.

EPA Region 4 has tested ESS, but has not moved forward with full ESS implementation.

EPA Region 8 staff received a Webcast introduction to ESS. The region is working on its ESS question sets.

EPA Region 10 staff and contractors have been successfully using the software in the field. Staff members have conducted more than 30 surveys in the field.

Indian Health Service staff members received a Webcast introduction to ESS. National management plans to use the software in various regional Indian Health Service offices. The California, Washington, and Arizona regions have installed the software and have begun test surveys.

Survey Counts

State	Surveys Completed
Alaska	69
Arizona	10
California	2
Connecticut	5
Hawaii	200
Indiana	12
Maine	110
Missouri	2
Utah	420

DEVELOPMENT OF WEB-BASED ESS BRIDGE

SDWIS Web Release 1 (SSWR1) data structures have undergone significant changes from the SDWIS State 8.0.5 version. The SDWIS contractor has just completed the work on migration-to-state for the Web release to provide SDWIS Web Release 1 (SSWR1) states with the capability to migrate water system and inventory data updates and site visit information to the SDWIS Web-based version from ESS. The SDWIS contractor will be working on the SDWIS Web Release 2 (SSWR2) and the Migration to State for release 2 is expected to be complete by the summer of 2007.

To populate the ESS software with SDWIS information, the ESS uses SDWIS structure sets in creating and migrating surveys with water system and inventory data. The Drinking Water Academy's ESS team will assess the impact of the changes to the SDWIS structure sets (SSWR2) and make necessary data and programming changes to ESS. States that are planning to migrate to SDWIS Web Release 1 or 2 need to coordinate the move with the Drinking Water Academy's ESS team to ensure the transition to the new Web-based SDWIS is coordinated for ESS use.

TABLET ESS SOFTWARE

The software for the Tablet ESS handles surveys in a manner similar to the PDA and returns data to the same storage platform. The tablet provides a better visual interface with a larger screen to handle a section of questions in a single page layout, compared to a PDA that displays three questions at a time. Since the release of the new version of the Tablet ESS software in fall 2005, a number of states have shown interest in using the Tablet ESS either exclusively or to complement the use of PDAs.

The size of the water system being surveyed, which affects the question set size, has influenced decisions on whether to use PDAs or tablets. PDAs are popular for conducting transient and small system surveys that have fewer than 200 questions. Tablet ESS is popular for conducting community (large) system surveys with more than 200 questions. The DWA ESS team built the software to allow such flexibility. Thus, states choose the option that best meets their needs.